

- 21 -

13313ID Ahmad

**TONE DETECTION AND ECHO CANCELLATION IN A COMMUNICATIONS
NETWORK**

ABSTRACT

5 A signalling tone detector for use in a communications network carrying voice
traffic incorporating single frequency and dual frequency signalling tones comprises
a first output path, a second output path, and a switch arranged to selectively
couple an input signal to one or other of the output paths. The first output path
comprises an automatic frequency control circuit for determining a mean frequency
of an input signal, comparison means for comparing the mean frequency with
stored frequency values corresponding to single tone signalling frequencies and
mean values of pairs of dual tone signalling frequencies, a first discriminator for
10 determining the presence of either a single frequency or a pair of frequencies, and
a second discriminator for providing a signal output indicative of the presence of a
single frequency or pair of frequencies. The second output path comprises a
phase locked loop arranged to respond in frequency and phase to modem
signalling tones and to detect phase reversals in a those tones. The detector is
15 used for the selective disablement of an echo canceller in the presence of
signalling tones.